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# Borough of Thetford.

# ANNUAL REPORT

of the

# MEDICAL OFFICER OF HEALTH

together with the

# REPORT OF THE PUBLIC HEALTH INSPECTOR FOR THE YEAR

# 1967

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## 1967

## STAFF

Medical Officer of Health:

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Public Health Inspector:

R.C.R. Robinson, M.A.P.H.I., A.R.S.H.

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Mr. Chairman, Ladies and Gentlemen,

I have the honour to present to you my Annual Report on the health services of the district for the year 1967.

The Registrar General's mid year estimate of population was 10,400. There were 231 live births of which 10 were illegitimate.

The adjusted birth rate is 16.6.

During the year there were 107 deaths and the adjusted death rate is 10.9.

The way we die is often a consequence of the way we live. This is shown in the recent statistics of the W.H.O. dealing with the ten leading causes of death in highly industrialised and in developing countries.

In a group of 23 mainly industrialised countries, nearly 70% of all deaths are due to diseases of the heart and blood vessels, to cancer and accidents.

In a group of mainly developing countries, infectious and parasitic diseases rank as the principal cause of death. Chief among them are diseases of the gastro-intestinal tract which account for the majority of diagnosed deaths in most of the 17 countries studied by the W.H.O. in Africa, Southern and Central America and Asia.

Influenza and pneumonia form other important causes, as do accidents. I make no apology for coming back to the topic of smoking. Lung cancer caused through smoking is one of the great public health problems of our time and we are not doing enough to solve it.

The tobacco manufacturers may have made a serious tactical error when they failed to present to the Minister of Health an agreed plan to curb promotion, including gift coupons.

The proposed tar-free cigarettes may actually be more dangerous if, as some suspect, the carcinogen is in the gaseous or volatile component of cigarette smoke rather then the tar.

With much of the nicotine removed in the tar filter, the nicotine addict will smoke more cigarettes to obtain satisfaction, and thus inhale more carcinogen.

Air pollution, particularly from internal combustion engines, could not be blamed, as the sharp rise in mortality began before the use of the petrol engine and long before diesel fuel. Garage workers, traffic policemen and others who come into frequent contact with engine fumes showed no higher incidence, and the channel islands and Finland with very little air pollution showed the highest incidence in the world.

As the most recent report of the National Society for Clean Air has pointed out, and as has been known and accepted medically for many years, the most hazardous gaseous effluent from motor vehicles is carbon monoxide. There may be many others, but this one is known and can be dealt with.

Carbon monoxide is toxic because it combines readily with haemoglobin in the bloodstream in place of oxygen, producing early symptoms of headache, sickness and dizziness.

Other exhaust emissions, such as unburnt and cracked hydrocarbons, not only take part in photochemical smog reactions, but also have narcotic effects.

In 1965 petrol driven vehicles in Britain emitted five million tons of carbon monoxide into the atmosphere, which with the additional 80, 000 tons from diesel driven vehicles, led to local concentrations in open streets which were much higher than the permitted industrial maximum for this narcotic and toxic gas.

Instances in London are given where, at pavement level, the carbon concentration reached 360 parts per million compared with 100 parts per million as an industrial maximum for an eight hour exposure. The recommended maximum in the U. S. A. is 50 parts per million.

Diesel engines only emit carbon monoxide when they smoke, but petrol engines exhaust gases always contain it. It is possible to cut vehicle exhaust pollutants down to half their present level simply by better engine design and by better carbonation. If this were done on new vehicles now, we might expect to see some improvement in the general situation in five or ten years time. Exhaust gas analysis and carburettor adjustment should be included in annual car tests.

At the moment no British petrol driven vehicle is clean enough to be sold in California. It seems probable that, in future, similar restrictions will be enforced in European countries.

The way is wide open for the establishment of European Standards and for ministerial action to limit this most serious aspect of vehicle air pollution.

Accidents in the home are the equivalent, in public health terms, of a major epidemic. Domestic accidents are a cause of death comparable in extent with tuberculosis, yet we respond to the threat of tuberculosis, however small, with far more vigour than we do to a comparable threat of accidental death or injury.

An example of the seriousness of accidents is afforded by Scotland. There the number of life years lost as a result of domestic accidents in 1959 was more than two and a half times the number lost through tuberculosis.

In Great Britain, for example, it was found in 1950 that 35, 000 children per year under two years of age, or one in 40, received medical treatment for accidents.

In 1962, in England and Wales, 3, 200 people died from falls in the home, 85 per cent of them were aged 65 years or more. Two thirds of them were women. Burns are another major cause of accidents. Poisoning stands third in importance as a cause of fatal domestic accidents in developed countries. Other potent sources of accidents include drowning, suffocation, firearms, electrical tools (electric drills and kitchen mixers etc.), and broken glass. Injudicious drinking can be dangerous even in the home.

A study by a life insurance company of persons aged 15 to 64 who died in home accidents during 1964-65 showed that about a seventh of 537 males and a fifth of 310 females were found to have been drinking.

In some countries the law probably remains the community's most efficient weapon against accidents in the home, prescribing minimum safety standards for building materials and household equipment, and designing more general public health regulations to make the environment safe.

The capacity of the individual to estimate risks and behave accordingly can be improved with training. Teaching of homecraft could be extremely helpful in enabling adolescents to learn the hazards associated with running a household.

In many cases defective sight or hearing need to be corrected before training in the avoidance of accident risks can be attempted. Provision of spectacles and all-frequency hearing aids, and of facilities for surgical operations are essential.

The Health Visitor can play a vital role in pointing out hazards in the home and having them corrected.

While excitement follows on excitement as heart transplant succeeds heart transplant, some important triumphs are on the way in what we might begin to call conventional medicine, especially preventive medicine.

Injections of gamma globulin to prevent haemolytic diseases of the newborn is becoming a routine procedure. This method has been well proved in trials in centres in different parts of the world. British research in the Liverpool Medical School has made a major contribution to this.

Mumps vaccine made from attenuated virus under trial in the United States, is claimed to give 95 per cent protection on challenge with natural mumps.

Rubella vaccine, also from an attenuated live virus, should soon be well on the way for general use.

The most unexpected development probably is the prospect of an anti-streptococcal vaccine. It is hoped it might make an important contribution to solving the problem of rheumatic fever.

With the governments "Package" of cuts it was announced that the supply of milk to children in secondary schools would cease altogether.

The effect of this cut, in terms of total public expenditure, may seem trivial, but its social cost may well exceed that of any other item in the package. Certainly it is a cut which will be received with concern by all who have studied the importance of milk in promoting the health and growth of children at school. For they regard the school milk scheme as a form of preventive medicine whose value, especially to those in early adolescence, is out of all proportion to its cost.

Professor John Yudkin, Professor of Nutrition at Queen Elizabeth College, London, is making a study of a group of children aged 11 in a London School, in what certainly cannot be described as a poor area. He had not only found that the dental health of children was better in those taking more milk, but there was also the suggestion, which he is seeking to confirm in a larger study, that those taking more milk were less frequently absent from school. But much the most interesting finding of his study related to the large number of children who have no breakfast, not even cornflakes, bread or toast. About one quarter of the boys and one third of the girls thus went as much as eighteen hours with no solid food in the period from their afternoon tea to the next day's lunch. The study made it clear that the nutritional state of the children would be even less satisfactory if they were also to be deprived of the possibility of obtaining milk at school.

Professor Yudkin says, "there are many ways in which children can obtain the diet necessary to promote health and proper growth, but the simplest and most economic way of ensuring this is to make certain they have a good supply of milk each day. My personal view is that the government's investment in school milk is paying excellent dividends".

The dividends increase with the size of family. The National Food Survey has demonstrated that in families with one child an average of 27 per cent of milk consumed per head is obtained through the welfare and school milk schemes. In families of 2, 3 and 4 children, the figures are 36, 40 and 47 per cent. For many poorer families, the welfare and school milk schemes undoubtedly provide much higher percentages of their total consumption.

The National Food Survey also provides statistical proof of the vital importance of milk as a source of protein and calcium to families with three or four children where, as in so many cases, the nutritional value of their diet falls below the recommended allowance.

In conclusion I gratefully acknowledge the kind assistance rendered to me by the Public Health Committee and have pleasure in expressing my thanks to all members of the department for their loyal and efficient service.

A. Afnan.

Table 1 GENERAL STATISTICS

| | |
|---|---|
| Area (in acres) | 7,096 |
| Estimated Resident Population | 10,400 |
| Rateable Value | £361,865 |
| Sum produced by a Penny Rate | £ 1,725 |

Table 2 LIVE BIRTHS

| | Males | Females | Total |
|---|---|---|---|
| Legitimate | 118 | 103 | 221 |
| Illegitimate | 2 | 8 | 10 |
| Totals | 120 | 111 | 231 |

Live Birth Rate per 1,000 of estimated Resident Population: Crude: 22.2
Adjusted: 16.6

Table 3 STILL BIRTHS

| | Males | Females | Total |
|---|---|---|---|
| Legitimate | 1 | – | 1 |
| Illegitimate | – | – | – |
| Totals | 1 | – | 1 |

Still Birth Rate per 1,000 total births: 4.3

Table 4 TOTAL BIRTHS

| | Males | Females | Total |
|---|---|---|---|
| Live | 120 | 111 | 231 |
| Still | 1 | – | 1 |
| Totals | 121 | 111 | 232 |

Table 5 INFANT DEATHS

(a) Infant Mortality (Deaths of Infants under 1 year)

| | Males | Females | Total |
|---|---|---|---|
| Legitimate | 3 | 5 | 8 |
| Illegitimate | – | – | – |
| Totals | 3 | 5 | 8 |

Infant Mortality Rates:
Total = 35 (per 1,000 live births)

(b) Neo-Natal Mortality (Deaths of Infants during first four weeks)

| | Males | Females | Total |
|---|---|---|---|
| Legitimate | - | 2 | 2 |
| Illegitimate | - | - | - |

Neo-Natal Mortality Rate (per 1,000 live births) = 8·6

(d) Perinatal Mortality (Still births and deaths under 1 week)

| | Males | Females | Total |
|---|---|---|---|
| Legitimate | 1 | 2 | 3 |
| Illegitimate | - | - | - |

Perinatal Mortality Rate (per 1,000 total births) = 13·0

Table 6 ILLEGITIMATE BIRTHS

Males - 2 Females - 8 Total - 10 = 5% of Total Live Births

Table 7 MATERNAL DEATHS (including abortion) = Nil.

Maternal Mortality Rate (per 1,000 total births) = Nil.

Table 8 DEATHS (All Ages)

| Males | Females | Total |
|---|---|---|
| 51 | 56 | 107 ~~127~~ |

Crude Death Rate (per 1,000 of estimated Resident Population) = 10·3
Adjusted Death Rate (per 1,000 of estimated Resident Population) = 10·9

## Table 9 CAUSE OF DEATH OF INFANTS UNDER ONE YEAR

| | Males | Females | Total |
|---|---|---|---|
| Heart disease | 1 | - | 1 |
| Pneumonia | - | - | - |
| Other infective & parasitic diseases | - | - | - |
| Other defined & ill-defined diseases | - | 2 | 2 |
| Congenital malformations | 1 | 2 | 3 |
| Other diseases of respiratory system | - | 1 | 1 |
| Gastritis, enteritis & diarrhoea | 1 | - | 1 |
| Totals | 3 | 5 | 8 |

## Table 10 NOTIFICATIONS OF DEATH RECEIVED DURING THE YEAR

(According to Age Groups)

| | Males | Females | Total |
|---|---|---|---|
| Under 4 weeks | - | 2 | 2 |
| 4 weeks and under 1 year | 3 | 3 | 6 |
| 1 and under 5 | - | - | - |
| 5 " " 15 | - | - | - |
| 15 " " 25 | - | - | - |
| 25 " " 35 | - | - | - |
| 35 " " 45 | 1 | 2 | 3 |
| 45 " " 55 | 8 | 1 | 9 |
| 55 " " 65 | 9 | 4 | 13 |
| 65 " " 75 | 10 | 7 | 17 |
| 75 and over | 20 | 37 | 57 |
| Totals | 51 | 56 | 107 |

Table 11 CAUSE OF TOTAL DEATHS (Registrar-General)

| Cause | Males | Females | Total |
|---|---|---|---|
| 1. Tuberculosis, respiratory. | - | - | - |
| 2. Tuberculosis, other. | - | - | - |
| 3. Syphilitic disease. | - | - | - |
| 4. Diphtheria. | - | - | - |
| 5. Whooping Cough. | - | - | - |
| 6. Meningococcal infection. | - | - | - |
| 7. Acute poliomyelitis. | - | - | - |
| 8. Measles. | - | - | - |
| 9. Other infective and parasitic diseases. | - | - | - |
| 10. Malignant neoplasm, stomach. | - | - | - |
| 11. Malignant neoplasm, lungs. bronchus. | 4 | 1 | 5 |
| 12. Malignant neoplasm, breast. | - | 3 | 3 |
| 13. Malignant neoplasm, uterus. | - | 1 | 1 |
| 14. Other malignant and lymphatic neoplasms. | 12 | 2 | 14 |
| 15. Leukemia, Aleukemia. | 1 | 1 | 2 |
| 16. Diabetes. | - | 1 | 1 |
| 17. Vascular lesions of nervous system. | 2 | 9 | 11 |
| 18. Coronary disease, angina. | 10 | 2 | 12 |
| 19. Hypertension with heart disease. |  | - | - |
| 20 Other heart diseases. | - | 16 | 19 |
| 21. Other circulatory diseases. | 3 | 3 | 6 |
| 22. Influenza. | 3 | - | 1 |
| 23. Pneumonia. | 1 | 3 | 7 |
| 24. Bronchitis. | 4 | 2 | 6 |
| 25. Other diseases of respiratory system. | 4 | 1 | 1 |
| 26. Ulcer of stomach and duodenum. | - | - | - |
| 27. Gastritis, enteritis and diarrhoea. | - | - | 1 |
| 28. Nephritis and nephrosis. | 1 | - | - |
| 29. Hyperplasia of prostate. | - | - | - |
| 30. Pregnancy, childbirth and abortion. | - | - | - |
| 31. Congenital malformations. | 1 | 2 | 3 |
| 32. Other defined and ill-defined diseases. | 4 | 4 | 8 |
| 33. Motor vehicle accidents. | - | - | - |
| 34. All other accidents. | 1 | 5 | 6 |
| 35. Suicide. | - | - | - |
| 36. Homicide and operations of war. | - | - | - |
| Totals | 51 | 56 | 107 |

## Table 12 COMPARISON WITH PREVIOUS YEARS

| | 1967 | 1966 | 1965 | 1964 | 1963 |
|---|---|---|---|---|---|
| Estimated Population | 10400 | 9730 | 8,400 | 7,380 | 7,096 |
| Total Births | 231 | 250 | 234 | 184 | 169 |
| Total Deaths | 107 ~~127~~ | 98 | 89 | 91 | 82 |
| Birth Rate (Crude) | 22·2 | 26.41 | 27.3 | 24.2 | 25.0 |
| Death Rate (Crude) | 10·3 | 10.07 | 10.5 | 11.3 | 12.15 |
| Infant Deaths | 8 | 6 | 7 | 2 | 5 |
| Infant Mortality Rate | 35 | 23.34 | 30.0 | 11.1 | 29.6 |
| Stillbirths | 1 | 3 | 1 | 5 | 4 |
| Stillbirth Rate | 4·3 | 11.54 | 4.2 | 27.2 | 23.1 |

## Table 13 NUMBERS OF INFECTIOUS AND OTHER NOTIFIABLE DISEASES

| | Under 1 | 1 | 2 | 3 | 4 | 5-9 | 10-14 | 15-24 | 25-44 | 45-64 | 65+ | Age unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scarlet Fever | | | | 3 | 6 | 8 | | | 1 | | | | 18 |
| Whooping Cough | 1 | | 1 | 1 | 2 | 5 | 1 | | | | | | 11 |
| Measles | 16 | 43 | 52 | 51 | 34 | 86 | 1 | 2 | | | | | 285 |
| Pneumonia | | | | 1 | | | | | | 1 | | | 2 |
| Food Poisoning | | | | | | | | 1 | | | | | 1 |
| Respiratory T. B. | | | | | | | | | 2 | | | | 2 |
| Infective Hepatitis | | | | | | | | 1 | | | | | 1 |
| Totals | 17 | 43 | 53 | 56 | 42 | 99 | 2 | 4 | 3 | 1 | - | - | 320 |

## Table 14 TUBERCULOSIS REGISTER

| Year | Respiratory | | | Other | | | Grand Total |
|---|---|---|---|---|---|---|---|
| | M | F | Total | M | F | Total | |
| 1967 | 11 | 16 | 27 | 3 | 2 | 5 | 32 |
| 1966 | 11 | 15 | 26 | 3 | 3 | 6 | 32 |
| 1965 | 14 | 13 | 27 | 3 | 3 | 6 | 33 |
| 1964 | 14 | 13 | 27 | 4 | 3 | 7 | 34 |
| 1963 | 13 | 13 | 26 | 4 | 2 | 6 | 32 |

## Table 15 TETANUS IMMUNISATION - Health Area 6

| | YEAR OF BIRTH | | | | | | TOTALS |
|---|---|---|---|---|---|---|---|
| | 1967 | 1966 | 1965 | 1964 | 1960-1963 | Others Under 16 | |
| Primary | 267 | 376 | 54 | 14 | 37 | 74 | 822 |
| Booster | 15 | 139 | 223 | 56 | 205 | 450 | 1088 |
| Totals | 282 | 515 | 277 | 70 | 242 | 524 | 1910 |

## Table 16 DIPHTHERIA IMMUNISATION - Health Area 6

| | YEAR OF BIRTH | | | | | | Totals |
|---|---|---|---|---|---|---|---|
| | 1967 | 1966 | 1965 | 1964 | 1960-1963 | Others Under 16 | |
| Primary | 267 | 375 | 54 | 13 | 30 | 38 | 777 |
| Booster | 14 | 138 | 219 | 53 | 196 | 342 | 962 |
| Totals | 281 | 513 | 273 | 66 | 226 | 380 | 1739 |

## Table 17 WHOOPING COUGH IMMUNISATION - Health Area 6

| | YEAR OF BIRTH | | | | | | Totals |
|---|---|---|---|---|---|---|---|
| | 1967 | 1966 | 1965 | 1964 | 1960-1963 | Others Under 16 | |
| Primary | 262 | 371 | 53 | 13 | 15 | 5 | 718 |
| Booster | 12 | 126 | 208 | 48 | 68 | 20 | 482 |
| Totals | 273 | 497 | 261 | 61 | 83 | 25 | 1200 |

## Table 18 SMALLPOX VACCINATION - Health Area 6

| Age at date of vaccination | Numbers vaccinated | Numbers re-vaccinated |
|---|---|---|
| 0 - 3 months | 8 | |
| 3 - 6 months | 1 | |
| 6 - 9 months | 7 | |
| 9 -12 months | 3 | |
| 1 year | 226 | |
| 2 - 4 | 151 | 5 |
| 5 - 15 | 45 | 76 |
| Totals | 441 | 81 |

## Table 19 ORAL POLIOMYELITIS - Health Area 6

| | YEAR OF BIRTH | | | | | | Totals |
|---|---|---|---|---|---|---|---|
| | 1967 | 1966 | 1965 | 1964 | 1960-1963 | Others Under 16 | |
| Primary | 239 | 390 | 60 | 20 | 27 | 8 | 744 |
| Booster | 18 | 57 | 38 | 9 | 325 | 59 | 506 |
| Totals | 257 | 447 | 98 | 29 | 352 | 67 | 1250 |

# ANNUAL REPORT OF THE PUBLIC HEALTH INSPECTOR

# FOR THE YEAR 1967.

Mr. Chairman, Ladies and Gentlemen,

I have pleasure in presenting my annual report for the year 1967 on the sanitary circumstances of the District. This report is a statutory obligation and is compiled in accordance with the requirements of the Ministry of Health Circular No. 1/68.

## WATER SUPPLY

The public supply is taken from a deep well sunk into chalk at Mundford Road, two boreholes on Barnham Cross Common and, during the year under review, two further boreholes drilled at Two Mile Bottom were brought into service. The water from all sources was chlorinated before being fed to the supply mains. Work was also completed on a new 2,000,000 gallon storage reservoir at Mundford Road which was linked into the supply system.

The total water storage capacity of 2,820,000 gallons proved to be adequate and no restrictions had to be imposed on the use of water during the year.

Information supplied by the Water Engineer showed that approximately 608,000 gallons of water per day were pumped, of which 230,000 gallons per day were used for industrial purposes, and 378,000 gallons per day for domestic use. Based on an estimated population of 12,000, the average domestic consumption amounted to 19 gallons per head of population, giving a total overall consumption of 51 gallons per head per day.

Water samples taken from the public supply were submitted to the Public Analyst and the Public Health Laboratory Service for chemical and bacteriological examination and the results were highly satisfactory. Copies of the chemical analysis reports and results of bacteriological examinstions of both raw and chlorinated water are given as an appendix. The Public Analyst states that the Thetford water supply would not be regarded as plumbo-solvent in the ordinary sense.

All occupied dwellings, excepting four houses on the extreme boundaries of the Borough, are supplied from the public mains. Of the four fully occupied houses using private water supplies, two have their water delivered twice per week by the Forestry Commission and the other two obtain their water from private boreholes.

Several samples taken from the private bore serving a cottage at Two Mile Bottom were unsatisfactory, and this was found to be due to the combination of a dirty, defective pump which was often primed with polluted stagnant water, and to the fact that the source was little used because all the occupants were away from the house throughout the day. After a thorough pump overhaul, chlorination, cleansing and pumping to waste, satisfactory results were eventually obtained.

The following table gives details of water supplied through the public mains:-

| Water supply | Number of dwellinghouses | Population supplied |
|---|---|---|
| (1) Direct to house | 3, 353 | 12, 000 |
| (ii) By means of standpipes | 8 | 13 |

The water mains were extended as follows to provide a public supply to private development sites, council estates and the Greater London Council Residential and Industrial Estates:

3 inch mains - 300 yards
4 inch mains - 180 yards
6 inch mains - 206 yards

## BATHING STATION

There is as yet no public swimming pool within the Borough, but suitable sites have been considered and a scheme is being prepared generally. The Bathing Station on the River Little Ouse was well patronised during the season, and the water was considered "clean" and safe for bathing purposes. Bacteriologically the counts were not unduly high for such water and frequent inspections of the river banks upstream for possible sources of pollution were made.

## SEWERAGE AND SEWAGE DISPOSAL

The arrangements for sewerage and sewage disposal in the district were adequate. New foul and surface water sewers were laid to serve areas of development for both housing and industrial development areas.

There were only fourteen occupied properties in the area without flush toilets. Those dwellings using pail or earth closets are either affected by slum clearance or by new road patterns or are so isolated as to have no sewers available. Three of the latter category of dwellings will shortly be converted to septic tank drainage.

The position at December, 1967, was as follows:-

| | |
|---|---|
| Number of occupied properties with pail closets .. .. | 13 |
| Number of occupied properties with earth closets .. .. | 1 |
| Number of septic tanks .. .. .. .. .. .. .. | 45 |

## CONSERVANCY

The weekly collection of soil, from premises with pail closets, has been carried out by Contract.

Septic tanks were emptied, as required, by contract and as a free service to the occupiers. The number of cesspools emptied in this way was 39.

## REFUSE COLLECTION AND DISPOSAL

The collection of refuse was carried out on a weekly basis and covered the whole district except for approximately six properties which, because of their extreme isolation from the collecting routes, cannot be accommodated. The collection was direct from the houses and, where possible, rear collections were made. The type of vehicles used were a Dennis Paxit Major II Refuse Collector of 22/30 cubic yards capacity, and a Karrier Ramillies 35 cubic yards Refuse Collection vehicle.

Provision was made for the collection of Trade Refuse at a fixed quarterly charge which varied with the number of bins collected from each premises.

The disposal of refuse was by semi-controlled tipping at pits outside the district. The refuse was put down by tractor and blade as and when required.

## HOUSING

### (i) General

The number of dwellings, including Council houses, occupied in the District according to the Rate Book was 3,361 and the estimated population figure was 12,000. Based on these figures, the average number of persons per dwelling was 3.57.

265 new dwellings were erected during the year; 71 houses were built by private enterprise, whilst 128 houses and 66 flats were erected by the Council. 37 Dwellings were demolished to make way for other development.

### (ii) Unfit Dwellings - Action under the Housing Acts.

A summary of action taken under the Housing Act was as follows:-

| | |
|---|---|
| Houses demolished | 15 |
| Houses closed | 3 |
| Families displaced | 3 |
| Persons rehoused | 4 |

As a result of routine inspections and visits to investigate complaints from tenants, informal action was taken to remedy some defect or other at 67 houses.

### (iii) Improvement Grants

With the increase in the amount of 'standard' grant aid under the Housing Act, 1964, from £155 for the five standard amenities, to £350 in cases where new structures had to be built to form a bathroom, no enquiries were received for the Discretionary Grant.

There was an increase in the number of 'standard' grants approved in 1967, compared with the total in 1966. 13 applications were approved and grant aid amounting to £1,503 15s. 1d. was paid. All improvements were to the full standard.

Approval was given in respect of a 'discretionary grant' application for the conversion of 4 almshouses to 2 dwellings of Parker Morris standard.

### (iv) Common Lodging Houses

There were no registered common lodging houses in the district.

## INFECTIOUS DISEASES

Investigations were made at premises from which cases of infectious diseases were notified and these included 18 cases of scarlet fever, 1 encephalitis Lethargica, and 1 suspected food poisoning. In respect of the food poisoning case, samples of the suspected meal were not available but specimens taken from the patient and contacts were forwarded to the laboratory for examination but no food poisoning organisms were found. The patient quickly recovered and food poisoning was not confirmed.

## MOVEABLE DWELLINGS - CARAVANS

No site licences were granted during the year under the Caravan Sites and Control Development Act, 1960

At the Annual Survey of caravans and tents carried out in all districts of Norfolk during August week, there were found in Thetford to be 2 caravans used in connection with works of Building and Engineering Construction, 1 marquee used by an Evangalist and 4 unauthorised tents at Two Mile Bottom Common.

Persons attempting to use common lands in the district for stationing caravans and tents were asked to move sometimes with the co-operation of the Police.

## OFFICES, SHOPS AND RAILWAY PREMISES ACT - 1963

All such premises are required by the Act to be registered with the local authority unless they are premises in which only close relatives of the occupier's family are employed or they are mainly factory premises. The Act together with the many Regulations made thereunder, lays down standards for the health, safety, welfare, working conditions and facilities for persons employed in such premises.

The following tables have been abstracted from the Annual Return required under Section 60 by the Ministry of Labour:-

## Registrations and General Inspections

| Class of Premises | Number of premises registered during the year | Total number of registered premises at end of year | Number of registered premises receiving a general inspection during the year |
|---|---|---|---|
| Offices | 5 | 42 | 38 |
| Retail Shops | 3 | 77 | 66 |
| Wholesale shops, warehouses | 1 | 5 | 4 |
| Catering establishments open to the public, canteens | 2 | 11 | 11 |
| Fuel storage depots | - | 4 | 3 |

## Analysis of Persons employed in Registered Premises by Workplace

| Class of Workplace | Number of Persons Employed |
|---|---|
| Offices | 189 |
| Retail Shops | 364 |
| Wholesale departments, warehouses | 23 |
| Catering establishments open to the public | 69 |
| Canteens | - |
| Fuel Storage Depots | 17 |
| TOTAL | 662 |
| Total Males | 322 |
| Total Females | 340 |

Number of Accidents Notified 4

## PREVENTION OF DAMAGE BY PESTS ACT, 1949

This Act requires every Local Authority to take such steps as may be necessary to secure as far as practicable that their district is kept free from rats and mice. In addition to dealing with complaints, surveys and treatments of areas were made including farmland, business premises, factories, sewers and all Council owned premises. Dwellinghouses were treated free of charge but business premises were charged on a time plus material basis. Included in the Operator's duties was the destruction of wasps nests, moles and rabbits on Council owned land only, and disinfestation work.

The following extract is taken from the Annual Report made to the Ministry of Agriculture, Fisheries and Food:-

| PROPERTIES OTHER THAN SEWERS | Type of Property | |
|---|---|---|
| | Non-agricultural | Agricultural |
| 1. Number of properties in district | 4,568 | 21 |
| 2. (a) Total number of properties (including nearby premises) inspected following notification | 317 | - |
| (b) Number infested by (i) Rats | 87 | - |
| (ii) Mice | 18 | - |
| 3. (a) Total number of properties inspected for rats and/or mice for reasons other than notification | 3,877 | 21 |
| (b) Number infested by (i) Rats | 122 | 21 |
| (ii) Mice | 1 | - |
| SEWERS: Sewers south of the river on a housing development site were found to be infested with rats. The infestation was cleared before it could spread further into the sewerage system. | | |

## SUPERVISION OF FOOD SUPPLIES AND PREMISES

### (a) Milk Distribution

The number of retail distributors on the register at the end of the year was nine - seven of these sold a few bottles of milk from shops only. A small amount of milk was retailed by dairymen situated in neighbouring Authority districts.

### (b) Inspection of Meat and other Foods

A considerable quantity of food was examined in the shops which resulted in the following list of meat and other foods being condemned and destroyed as unfit for human consumption.

| | |
|---|---|
| Tomato Puree | 435 x 5 kilo cans (4,896 lbs.) |
| Canned Pork | 214 lbs. |
| Corned Beef | 24 lbs. |
| Jellied Veal | 6 lbs. |
| Shins of Beef | 116 lbs. |
| Hogget of lamb | 20 lbs. |
| Lamb livers (frozen) | 50 lbs. |
| Pig Kidneys (frozen) | 9 lbs. |
| Dried Prunes | 4 lbs. |
| Bacon | 14 lbs. |
| Pies and Sausage Rolls | 11 |
| Fish Paste | 457 jars. |
| Beef Paste | 284 jars. |
| Meat | 196 tins. |
| Vegetables | 93 tins. |
| Fruit | 75 tins. |
| Cheese | 36 packets. |
| Sausages | 11 packets. |
| Various other tin foods | 24 tins. |

| Frozen Foods due to breakdown in refrigeration plant | |
|---|---|
| Fruit | 8 packets. |
| Mousse | 23 packets. |
| Fish | 25 packets. |
| Meat | 9 packets. |
| Vegetables | 9 packets. |
| Pastry | 6 packets. |
| Pies | 3 |
| Chickens | 2 |

The jars of Beef and Fish paste were condemned because of a fault in production. Other reasons for condemnation were blown, damaged, punctured and leaking seams in cans and tins; taint in bacon; liquefaction of contents in cans of meat; decomposition and moulds.

### (c) Meat Inspection

There were two licensed private slaughterhouses operating within the district and used by two butchers only. The number of beasts killed during the year was a little lower than the kill in 1966 which was due to the running down of one slaughterhouse after a take over by a larger concern having their own abattoir in Cambridge.

To maintain a 100% post mortem inspection service 158 visits were made to the slaughterhouses, which might appear to be a large number of visits compared with the number of animals slaughtered, but was necessary due to frequency of slaughtering in small quantities.

The general quality of the animals slaughtered was good and the incidence of disease little different to 1966. Condemnation was mostly confined to offals. Thorough examination of every carcase was made but no cases of cysticerous Bovis or lesions of tuberculosis were found amongst the bovine animals slaughtered. The reasons for condemnation were:- abscesses, flukes, cirrhosis, milk spot, pneumonia, pericarditis, congestion, linguatula rhinaria and tuberculosis (in pigs only).

The following table gives details of animals killed, together with information regarding numbers and percentages affected by disease:-

| | Cattle excluding Cows | Cows | Calves | Sheep and Lambs | Pigs | Horses |
|---|---|---|---|---|---|---|
| Number killed | 151<br>(184) | - | - | -<br>(1) | 231<br>(224) | - |
| Number inspected | 151<br>(184) | - | - | -<br>(1) | 231<br>(224) | - |
| All Diseases except Tuberculosis and Cysticerci<br>Whole carcases condemned | - | - | - | - | - | - |
| Carcases of which some part or organ was condemned | 25<br>(41) | - | - | - | 8<br>(12) | - |
| Percentage of the number inspected affected with disease other than tuberculosis and cysticerci | 16.6%<br>(22.28%) | - | - | - | 3.5%<br>(5.36%) | - |
| Tuberculosis only<br>Whole carcases condemned | - | - | - | - | - | - |
| Carcases of which some part or organ was condemned | - | - | - | - | 3<br>(2) | - |
| Percentage of the number inspected affected with tuberculosis | - | - | - | - | 1.3%<br>(0.9%) | - |
| Cysticercosis<br>Carcases of which some part or organ was condemned | - | - | - | - | - | - |
| Carcases submitted to treatment by refrigeration | - | - | - | - | - | - |
| Generalised and totally condemned | - | - | - | - | - | - |

Figures in brackets relate to 1966.

| All diseases except Tuberculosis and Cysticerci | | Tuberculosis Only | |
|---|---|---|---|
| Offal | Meat | Offal | Meat |
| 346 lbs<br>(532 lbs) | 39 lbs<br>(13 lbs.) | -<br>(6 lbs) | 30 lbs<br>(13 lbs) |

Figures in brackets relate to 1966.

(d) Six licences were issued to suitable persons authorising them to slaughter animals by approved methods of stunning. None authorised the holder to slaughter horses.

(e) Carcases of beef found to be infested with Cysticercus Bovis in slaughterhouses outside the district were brought into the Thetford Cold Store for refrigeration. These carcases were checked into the Store and, after refrigeration for the required period of time, were stamped and released for human consumption.

(f) Food Premises

Routine inspections were made at all the food premises in the district and where necessary advice was given and, in some cases, informal notices served requesting repairs or alterations to keep premises up to the standards required by the Hygiene Regulations.

Since the housing estates have reached sizeable proportions under the G. L. C. expansion scheme a large number of mobile shops selling fish and chips, wet fish, ice-cream, vegetables, fruit and confectionery etc. have been operating in the area. Inspection of these vehicles revealed contraventions of the Hygiene Regulations which were dealt with by informal action.

Investigations were carried out after receipt of a complaint concerning the purchase of meat pie containing a matchstick. The pie was taken to the Public Analyst for examination and he was of the opinion that there was a very good possibility that the match was inserted after the pie had been baked and therefore did not think that legal proceedings would be advisable.

Cooked sausages brought to the office with a complaint that they "tasted bad" were sent to the Public Analyst for examination but it was found that they were fit for human consumption although they were slightly more peppery than usual.

Warning letters were sent on four occasions to different shops requesting closer control over the sale of meat pies and proper rotation of stock according to code and date marks - this followed the sale of pies affected by moulds.

Certificates of Health were given in respect of 3, 745 packages of bacon amounting to approximately 56 tons by weight destined for export to Singapore. The product was inspected during the various stages of preparation, handling and packing prior to the issue of certificates.

The number of food premises registered under Section 16 of the Food and Drugs Act, 1955 was as follows:-

1. For the purpose of "the preparation of fish by any process of cooking, for sale for human consumption". . . . . . . . . . . 2
2. For the purpose of "the sale of Ice - Cream" . . . . . . . . . . .21
3. For the purpose of "the preparation or manufacture of sausages or potted, pressed, pickled, or preserved food intended for sale for human consumption including the pre-aration of meat by any process of cooking" . . . . . . . . . . . . .10

The number of food premises in the area by type of business is as follows (Food Hygiene (General) Regulations, 1960):-

| Type of Premises | Number | Complying with Regulation 16 | To which Reg. 19 applies | Complying with Reg. 19 |
|---|---|---|---|---|
| Cafes/Restaurants | 15 | 15 | 15 | 15 |
| Greengrocers/Grocers | 21 | 21 | 21 | 21 |
| Confectionery, Cakes, etc. | 17 | 17 | 17 | 17 |
| Public Houses | 17 | 17 | 17 | 17 |
| Fish Shops | 5 | 5 | 5 | 5 |
| Bakehouses | 2 | 2 | 2 | 2 |
| General Stores | 9 | 9 | 9 | 9 |
| Butchers Shops | 9 | 9 | 9 | 9 |
| Food Factories | 3 | 3 | 3 | 3 |
| Factory Canteens | 15 | 15 | 15 | 15 |
| School Kitchens | 6 | 6 | 6 | 6 |
| Cold Storage Depot | 1 | 1 | - | - |
| Food Warehouses | 4 | 4 | - | - |

(f) Ice-Cream

There were 19 premises registered in accordance with Section 16 of the Food and Drugs Act, 1955, for the sale of Ice-cream. In all cases, the Ice-cream was sold as wrapped. A number of Ice-cream vans visit the town every day selling soft Ice-cream. 14 samples were submitted for bacteriological examination - 13 were returned as Grade 1 and 1 as Grade II.

(g) The Meat (Staining and Sterilization) Regulations, 1960.

The Cold Store received throughout the year imported consignments of beef and sheep lungs, spleens, tongue roots, trimmings and horse meat which was unfit for human consumption, and stored it pending delivery to a Pet Foods factory for sterilization and processing.

Under the above Regulations, notification was received from the Port Health Authority prior to delivery from the docks and supervision was maintained on the unloading, delivery, marking, storage and release at the Railway Station and the Cold Store. Approximately 80, 000 cartons, bags etc. were notified by Port Authorities and received in Thetford.

## FACTORIES ACT, 1961
### Part 1 of the Act

1. Inspections for purposes of provisions as to health (including the inspections made by Public Health Inspectors).

| Premises | Number on Register | Number of | | |
|---|---|---|---|---|
| | | Inspections | Written notices | Occupiers prosecuted |
| (i.) Factories in which Sections 1, 2, 3, 4, and 6 are to be enforced by Local Authorities. | 2 | 2* | - | - |
| (ii) Factories not included in (i) in which Section 7 is enforced by the Local Authority | 107 | 58* | 5 | - |
| (iii) Other premises in which Section 7 is enforced by the Local Authority. (Excluding out-workers premises) | 47 | 71* | 7 | - |
| Total | 156 | 131* | 12 | - |

*The figures given here are much less than the actual number of visits because those factories, which are also food premises, received many visits during the year, although they were not made primarily under the Factories Act. Minor infringements were dealt with informally.

## FACTORIES ACT

### Part 1 of the Act (continued)

| Particulars | Number of cases in which defects were found | | | | Number of cases in which prosecutions were instituted |
|---|---|---|---|---|---|
| | Found | Remedied | Referred | | |
| | | | To H.M. Inspector | By H.M. Inspector | |
| Want of cleanliness | 3 | 3 | - | - | - |
| Overcrowding | - | - | - | - | - |
| Unreasonable temperature | - | - | - | - | - |
| Inadequate ventilation | - | - | - | - | - |
| Ineffective drainage of floors | - | - | - | - | - |
| Sanitary Conveniences | | | | | |
| (a) Insufficient | 2 | 2 | - | - | - |
| (b) Unsuitable or defective | 7 | 7 | - | - | - |
| (c) For separate sexes | - | - | - | - | - |
| Other offences against the Act (not including offences relating to Outwork) | - | - | - | - | - |
| Total | 12 | 12 | - | - | - |

### Part VIII of the Act

### Outwork

### (Sections 110 and 111)

| Nature of Work | No. of out-workers in August list required by Sect. 110 (1) (c) | No. of cases of default in sending lists to the Council | No. of prosecutions for failure to supply lists | No. of instances of work in unwholesome premises | Notices served | Prosecutions |
|---|---|---|---|---|---|---|
| Wearing apparel making etc. | - | - | - | - | - | - |
| Cleaning and washing | - | - | - | - | - | - |
| Total | - | - | - | - | - | - |

## Clean Air Act 1956

The development of the three industrial estates under the Town Expansion Scheme has brought problems in connection with the Clean Air Act. Notification is required to be given to local authorities of the proposed installation of any boiler/furnace plant to give health officials the opportunity of examining the proposals to ensure that the plant will operate efficiently without causing a nuisance or a danger to health. To this end the height of the chimney stack is vital to properly disperse the products of combustion and particularly the sulphur dioxide which, as well as being a health hazard, can cause a great deal of damage to vegetation, crops, livestock, building materials etc.

Applications for "Prior Approvals" of new installations were dealt with in accordance with the calculation methods contained in the Ministry's Memorandum on Chimney Heights.

Informal Action to abate smoke nuisances from two pre-expansion era factories was taken and in one case a request to heighten the existing stack was complied with.

## Other Matters

### (i) Agriculture (Safety, Health and Welfare) Provisions Act, 1956.

Visits of inspections were made at farms to ensure that employees were provided with satisfactory sanitary accommodation. In general, the farms are small and employees are able to use the accommodation at the farm buildings.

### (ii) Shop Acts 1950

Routine inspections have been made to ensure that shops comply with the legislation relating to suitable ventilation, lighting, seating, welfare, sanitary accommodation, washing facilities etc.

The Local Authority being a Borough Council are also responsible for the Shop Hours of Closing provisions and your Public Health Inspector is the appointed Shops Act Inspector for this purpose. This entails visits out of normal working hours, during the evening up to 10pm and also Sunday surveys of the area.

### (iii) Pet Animals Act 1951

One licence was granted under this Act during the year.

### (iv) Scrap Metal Dealers Act, 1964

Seven such dealers were registered under the Act and visits were made to all premises for inspection and to ascertain that records were kept as required by legislation and to check stock held against the recorded details.

Letters containing details of a Ministry of Health Circular, drawing attention to the dangers of lead poisoning arising from the burning and burial of car battery casings, were sent to all scrap metal dealers.

In conclusion, I would like to express appreciation and thanks to Members of the Council for their continued support and consideration and to the Medical Officer and all other members of the staff for their assistance and co-operation.

R. C. R. Robinson,
Public Health Inspector.

LINCOLNE SUTTON AND WOOD LTD.

Clarence House,
6 Clarence Road,
NORWICH.

Telephone No. 24555

Cert. No. U.462.
Lab. No. 4760/W.

2nd January, 1968.

## CERTIFICATE OF ANALYSIS OF WATER

Sample received 13th December, 1967 from Thetford Borough Council.

Marked Headworks - Two Mile Bottom.

Appearance when received clear.

Nature of Deposit nil.

Colour nil. Odour nil.

Reaction faintly alkaline. pH 7.6 Taste satisfactory.

## RESULTS OF CHEMICAL ANALYSIS IN PARTS PER MILLION.

| | |
|---|---|
| Ammoniacal nitrogen | 0.01 |
| Albuminoid nitrogen | 0.01 |
| Nitrate nitrogen | 7 |
| Nitrite nitrogen | nil. |
| Chloride as Cl. | 14 |
| Permanganate Value (4 hr.) | 0.04. |

| | |
|---|---|
| Hardness as $CaCO_3$ | |
| Total | 225 |
| Carbonate (temporary) | 180 |
| Non-carbonate (permanent) | 45 |
| Alkalinity as $CaCO_3$ | 180 |
| Free carbon dioxide | 9 |
| Total solids (at 180 C.) | 295 |
| Iron (total) | 0.07 |
| Metals in solution | nil. |

## BACTERIOLOGICAL RESULTS

| | |
|---|---|
| Number of colonies developing per ml. in 48 hours at 37° C | nil. |
| Presumptive coliform organisms - Probable Number per 100 ml. | nil. |

## OPINION

The organic quality of this water is very good and its bacteriological condition is very satisfactory. The total hardness is approximately 16° Clark, all but 3° of which is temporary. The reaction is well on the alkaline side of neutrality and corrosive action upon metals is not to be expected. In our opinion, this water is very suitable for drinking and general purposes.

for Lincolne Sutton and Wood Limited.
Signed: Eric C. Wood.

## LINCOLNE SUTTON AND WOOD

Clarence House,
6,Clarence Road,
NORWICH.
2nd January, 1968.

Telephone 24555
Cert. No. U.461
Lab. No. 4759/W.

## CERTIFICATE OF ANALYSIS OF WATER

Sample received: 13th December 1967 from Thetford Borough Council.
Marked: Barnham Cross Headworks - Public Supply
Appearance when received: clear
Nature of Deposit: nil.
Colour: nil.
Odour: nil.
Reaction: Faintly alkaline: pH. 7.7
Taste: satisfactory.

## RESULTS OF CHEMICAL ANALYSIS IN PARTS PER MILLION

Ammoniacal nitrogen: 0.02
Albuminoid nitrogen: 0.01
Nitrate nitrogen: 3.5
Nitrite nitrogen: nil.
Chloride as Cl. 16
Permanganate Value (4 hr.): 0.08

Hardness as $CaCO_3$:
- Total: 230
- Carbonate (temporary): 180
- Non-carbonate (permanent): 50

Alkalinity as $CaCO_3$: 180

Free carbon dioxide: 7
Total solids (at 180° C.): 280
Iron (total): 0.08
Metals in solution: nil.

## BACTERIOLOGICAL RESULTS

Number of colonies developing per ml. in 48 hours at 37° C.: nil
Presumptive coliform organisms - Probable Number per 100 ml.: nil.
E. Coli Type 1 ("faecal") - Probable Number per 100 ml.: nil.

## OPINION

This water is of very good organic and bacteriological quality. The analysis as a whole differs little from that of previous samples. In our opinion this water is very suitable for drinking and general purposes.

For Lincolne Sutton and Wood Ltd.,
Signed: Eric. C. Wood.

# APPENDIX

## LINCOLNE SUTTON AND WOOD

Clarence House,
6,Clarence Road,
NORWICH.

Telephone 24555
Cert. No. U.463.
Lab. No. 4761/W.

2nd January 1968.

## CERTIFICATE OF ANALYSIS OF WATER

Sample received: 13th December 1967 from Thetford Borough Council.
Marked: Tap off rising main, Headworks - Mundford Road.
Appearance when received: clear.
Nature of Deposit: nil.
Colour: nil.
Reaction: Faintly alkaline. pH:7.3
Odour: nil.
Taste: satisfactory.

## RESULTS OF CHEMICAL ANALYSIS IN PARTS PER MILLION

Ammoniacal nitrogen: neg trace
Albuminoid nitrogen: 0.01
Nitrate nitrogen: 8
Nitrite nitrogen: nil.
Chloride as Cl: 22
Permanganate Value (4 hr.): 0.04

Hardness as $CaCO_3$:
  Total: 260
  Carbonate (temporary): 195
  Non-carbonate (permanent): 65
Alkalinity as $CaCO_3$: 195
Free carbon dioxide: 13
Total solids (at 180° C.): 360
Iron (total): 0.12
Metals in solution: nil.

## BACTERIOLOGICAL RESULTS

Number of colonies developing per ml. in 48 hours at 37° C: nil.
Presumptive coliform organisms - Probable Number per 100 ml.: nil.
E. Coli Type 1 ("faecal") - Probable Number per 100 ml.:

## OPINION

The water is of very good organic and bacteriological quality. The analysis as a whole differs little from that of the previous sample from this source (our Cert. No. T.1387). In our opinion this water is very suitable for drinking and general purposes.

for Lincolne Sutton and Wood Limited.
signed: Eric C. Wood.

# LINCOLNE SUTTON AND WOOD

Clarence House,
6, Clarence Road,
NORWICH.
21st July, 1967.

Telephone 24555
Cert. T.1387
Lab. No. 3496/W

## CERTIFICATE OF ANALYSIS OF WATER

Sample received: 20th June, 1967, from Thetford Borough Council.
Marked: Mundford Road Headworks Ref. TBC/67/1C. o/n. 3162
Appearance when received: clear
Nature of Deposit: nil.
Colour: nil.
Reaction: Neutral. pH. 7.3
Odour: nil
Taste: satisfactory.

## RESULTS OF CHEMICAL ANALYSIS IN PARTS PER MILLION

Ammoniacal nitrogen: neg. trace
Albuminoid nitrogen: neg. trace.
Nitrate nitrogen: 8.0
Nitrite nitrogen: nil
Chloride as Cl: 24
Fluorine: 0.09

Hardness as $CaCO_3$:
- Total: 255
- Carbonate (temporary): 200
- Non-carbonate (permanent): 55

Alkalinity as $CaCO_3$: 200

Free Carbon dioxide: 24
Total solids (at 180° C.): 335
Iron (total): 0.03
Metals in solution: nil.

## BACTERIOLOGICAL RESULTS

Number of colonies developing per ml. in 48 hours at 37° C. 1
Presumptive coliform organisms - Probable Number per 100 ml.: nil.
E. Coli Type 1 ("faecal") - Probable Number per 100 ml.: nil.

## OPINION

The water is of excellent bacteriological and organic quality. The total hardness is approximately 18° Clark, 14° of which is temporary. The iron content is negligible and the reaction of the water is just on the alkaline side of neutrality. In our opinion this water is very suitable for drinking and general purposes.

for Lincolne Sutton and Wood Limited.
Signed: Eric C. Wood.

# APPENDIX
## LINCOLNE SUTTON AND WOOD

Telephone 24555
Cert. No. T. 1388.
Lab. No. 3497/W.

Clarence House,
6, Clarence Road,
NORWICH.
21st July, 1967.

## CERTIFICATE OF ANALYSIS OF WATER

Sample received: 20th June, 1967 from Thetford Borough Council.
Marked: Tap off rising main, Barnham Cross Headworks. Ref: TBC/67/2C. o/n 3162.
Appearance when received: clear
Nature of deposit: nil.
Colour: nil.
Reaction: Faintly alkaline: pH. 7.5
Odour: nil.
Taste: satisfactory

## RESULTS OF CHEMICAL ANALYSIS IN PARTS PER MILLION

Ammoniacal nitrogen: neg. trace
Albuminoid nitrogen: neg. trace
Nitrate nitrogen: 3.5
Nitrite nitrogen: nil.
Chloride as Cl: 18
Permanganate Value (4 hr.): 0.05.

Hardness as $CaCO_3$:
- Total: 205
- Carbonate (temporary): 180
- Non-carbonate (permanent): 25

Alkalinity as $CaCO_3$: 180
Free carbon dioxide: 14
Total solids (at 180°C.): 255
Iron (total): 0.06
Metals in solution: nil

## BACTERIOLOGICAL RESULTS

Number of colonies developing per ml. in 48 hours at 37° C.: NIL
Presumptive coliform organisms - Probable Number per 100 ml.: NIL
E. Coli Type 1 ("faecal") - Probable Number per 100 ml.: NIL

## OPINION

This water is of excellent quality both bacteriologically and organically. The total hardness is approximately 14° Clark, almost all of which is temporary. The reaction of the water is on the alkaline side of neutrality. In our opinion this water is very suitable for drinking and general purposes.

for Lincolne Sutton and Wood Ltd.,
signed: E. C. Wood.

LINCOLNE SUTTON AND WOOD LTD.

Clarence House,
6 Clarence Road,
Norwich, NOR 29 T.

Cert. No. U.431
Lab. No. 4762/3/W

27th December, 1967.

## CERTIFICATE OF ANALYSIS

| | |
|---|---|
| Nature of Sample | Water from lead service pipes |
| Received | 13th December 1967 from Thetford Borough Council. |
| Marked | as below |

| | Lead parts per million |
|---|---|
| G.P.O. Premises,<br>Market Place, Thetford. | 0.01 |
| King's House,<br>King Street, Thetford. | nil. |

These results are very satisfactory.

for Lincolne Sutton and Wood Ltd.,
T. J. Howard.

# BACTERIOLOGICAL EXAMINATION OF WATER

| Date | Source | Probable numbers per 100 ml. | |
|---|---|---|---|
| | | Coliform bacilli | Bact. coli (type 1) |
| 19. 1.67. | No. 2 Bore, Two Mile Bottom (Raw Water) | 0 | 0 |
| 23. 1.67. | No. 1 Bore, Two Mile Bottom (Raw Water) | 0 | 0 |
| 16. 2.67. | Kimms Belt (Public Supply) | 0 | 0 |
| 16. 2.67. | Industrial Estate (Public Supply) | 0 | 0 |
| 24. 4.67. | King Street (Public Supply) | 0 | 0 |
| 24. 4.67. | Station Road (Public Supply) | 0 | 0 |
| 20. 6.67. | Barnham Cross Headworks (Raw Water) | 0 | 0 |
| 20. 6.67. | Mundford Road Headworks (Raw Water) | 0 | 0 |
| 22. 6.67. | Abbey Farm New Mains (Public Supply) | 0 | 0 |
| 22. 6.67. | Mundford Road, New Mains (Public Supply) | 0 | 0 |
| 22. 6.67. | Norwich Road, New Mains (Public Supply) | 0 | 0 |
| 22. 6.67. | White Hart Street, New Mains (Public Supply) | 0 | 0 |
| 13. 7.67. | Mundford Road, New Mains (Public Supply) | 0 | 0 |
| 10. 8.67. | King Street (Public Supply) | 0 | 0 |
| 10. 8.67. | Bore, Two Mile Bottom (Private Supply) | 0 | 0 |
| 10. 8.67. | Storage Tanks, Olleys Farm (Private Supply; water delivered) | 0 | 0 |
| 10. 8.67. | Bore, Railway Cottages, Two Mile Bottom (Private Supply) | 9 | 2 |
| 4. 9.67. | Bore, Railway Cottages, Two Mile Bottom (Private Supply) | 18 | 0 |
| 4. 9.67. | White Hart Street, (Public Supply) | 0 | 0 |
| 7. 9.67. | New Reservoir Tank No. 1 | 0 | 0 |
| 7. 9.67. | New Reservoir Tank No. 2 | 0 | 0 |
| 25. 9.67. | Bore, Railway Cottages, Two Mile Bottom (Private Supply) | 30 | 0 |
| 2.10.67. | Redgate (Public Supply) | 0 | 0 |
| 2.10.67. | Green Lane (Public Supply) | 0 | 0 |
| 14.11.67. | Bore, Railway Cottages, Two Mile Bottom (Private Supply) | 180+ | 11 |
| 14.11.67. | St. Martins Way, (Public Supply) | 0 | 0 |
| 14.11.67. | Redgate (Public Supply) | 0 | 0 |
| 14.11.67. | Bore, Two Mile Bottom (Private Supply) | 0 | 0 |
| 13.12.67. | Bore, Railway Cottages, Two Mile Bottom (Private Supply) | 18 | 0 |
| 13.12.67. | Barnham Cross Headworks (Raw Water) | 0 | 0 |
| 13.12.67. | Headworks, Two Mile Bottom (Raw Water) | 0 | 0 |
| 13.12.67. | Mundford Road Headworks (Raw Water) | 0 | 0 |

## LINCOLNE SUTTON AND WOOD LTD

Cert. No. S.1232
Lab. No. 1679/W

27th July, 1966.

## CERTIFICATE OF ANALYSIS OF WATER

Marked: Drinking Water - Santon Downham
Appearance when received: clear
Nature of Deposit - nil
Colour: nil
Odour: nil

Taste: satisfactory
Reaction: slightly alkaline, ph 8.0

## RESULTS OF CHEMICAL ANALYSIS IN PARTS PER MILLION

Ammoniacal nitrogen: neg trace
Albumnoid nitrogen: 0.01
Nitrate Nitrogen: 5
Nitrite nitrogen: nil
Chloride as C1: 12
Permangante Value: 0.14 (4hr)
Hardness as $CaCO_3$:
Total 200

Carbonate (temp): 170
Non-carbonate (perm): 30
Alkalinity as $CaCO_3$: 170
Free carbon dioxide: 8
Total Solids (at 180°C): 290
Iron (total): 0.17
Lead and Zinc: nil
Metals in Sol. Copper: very faint trace

## BACTERIOLOGICAL RESULTS

Number of colonies developing per ml. in 48 hours at 37°C. 11.
Presumptive coliform organisms - Probable Number per 100 ml. nil

## OPINION

This water is of very good organic quality and its bacteriological condition is very satisfactory. As compared with the previous sample (see our Report S.677) the analytical characteristics of this water have changed only in minor details without significance. In our opinion this water is free from pollution and is suitable for drinking and general purposes.

Lincolne Sutton and Wood Limited.

Report S.1232.

27th July, 1966.

## DRINKING WATER - SANTON DOWNHAM

| | | |
|---|---|---|
| Calcium as Ca | 76 | parts per million |
| Magnesium as Mg | 2 | " |
| Sodium as Na | 12 | " |
| Carbonate as $CO_3$ | 102 | " |
| Chloride as C1 | 12 | " |
| Sulphate as $SO_4$ | 15 | " |
| Nitrate as $NO_3$ | 22 | " |
| Iron as Fe | 0.17 | " |
| Fluorine as F | 0.1 | " |
| Silica as $SiO_2$ | 4 | " |